201-15890

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05/16/2005 05:21 PM

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Subject: Environmental Defense comments on Chlorinated C2 Streams (CAS# 68411-72-3)

(Submitted via Internet 5/16/05 to oppt.ncic@epa.gov, hpv.chemrtk@epa.gov, / boswell.karen@epa.gov, chem.rtk@epa.gov, MTC@mchsi.com, and cehoutman@dow.com)

Environmental Defense appreciates this opportunity to submit comments on the robust summary/test plan for **Chlorinated C2 Streams (CAS# 68411-72-3)**.

The Dow Chemical Company, in response to EPA's High Production Volume (HPV) Chemical Challenge, has submitted robust summaries and a test plan describing available data for 1,1,2,2-tetrachloroethane as a surrogate for chlorinated C2 streams (CAS# 68411-72-3).

According to the sponsor, the chlorinated C2 streams are a "compilation of process intermediate streams produced at several manufacturing facilities." No information is provided regarding the sources or uses of this chemical mixture or possible releases that may result in human or environmental exposure. According to the sponsor the chlorinated C2 streams consist primarily of 1,1,2,2-tetrachloroethane (64%) and 1,1,2-trichloroethane (approximately 15%). However, given the fact that the chlorinated C2 streams have variable origins, their compositions are variable according to the sponsors; it also seems possible or likely that the contents vary from batch to batch. The sponsor does not mention possible variations from batch to batch, but states that no single component in the remaining contents of the chlorinated C2 streams accounts for more than a few percent of the total, although no support for this claim is provided. We would also point out that approximately 21% of the total contents of the C2 streams are not identified in this submission.

The sponsor proposes to use data for the major constituent of the chlorinated C2 streams, 1,1,2,2-tetrachloroethane, as surrogate to represent all of the constituents of the mixture. This is convenient for the sponsor because 1,1,2,2-tetrachloroethane is a data-rich chemical that was the subject of a recent OECD SIDS program assessment. The sponsor's present submission draws largely from the resulting OECD SIDS report.

With respect to the conclusions of the OECD SIDS assessment, the sponsor claims the following: "Significantly, 1,1,2,2-tetrachloroethane has also been evaluated previously as part of the OECD SIDS program (http://www.oecd.org). It was judged to be "of low priority for further work" at SIAM 15 (October, 2002) indicating the adequacy of its database for coverage of spectrum of OECD SIDS endpoints and lack of significant concern over its toxicological characteristics."

While OECD did provide a recommendation of low priority for this chemical, the OECD SIDS Profile makes clear that the priority determination was based on a claim of anticipated low *exposure* – not the absence of hazard. In fact, the sponsor's claim that the low priority was due to a "lack of significant concern over its toxicological characteristics" is patently false. The OECD SIDS assessment found that this chemical is: 1) very toxic to humans exposed acutely; 2) an eye and skin irritant; 3) toxic to the liver and kidney upon repeated exposure; 4) capable of causing damage to the nervous and hematological systems; 5) potentially genotoxic; 6) capable of inducing hepatocellular carcinoma in mice, but not in rats; and 7) of uncertain toxicity to reproduction and development due to lack of sufficient data – these latter conclusions being wholly at odds with those claimed by the sponsor in the current submission. The OECD assessment also found the chemical to be: 8) not readily biodegradable and 9) quite toxic to aquatic organisms. The sponsor's blatant misrepresentation of the OECD SIDS assessment hardly builds confidence in the accuracy and objectivity of the present submission. See the OECD SIDS profile for this chemical, available online at http://www.chem.unep.ch/irptc/sids/OECDSIDS/79345.pdf or by entering the chemical's CAS number (79345) into the search function of the OECD HPV database at http://cs3-hq.oecd.org/scripts/hpv/.

We are concerned that the present submission only addresses 1,1,2,2-tetrachloroethane. Thus, whereas it may be that the proposal to use data for 1,1,2,2-tetrachloroethane as a surrogate for all other members of the mixture is reasonable, in the absence of full compositional information this approach has not been sufficiently supported; hence, we believe that data should be provided for other significant members of the chlorinated C2 streams. For example, the sponsor states, but does not provide evidence, that 1,1,2,2-tetrachloroethane is the most toxic of the chlorinated ethanes. That statement may be true, but it is not supported by any comparative data or references. If 1,1,2,2-tetrachloroethane is indeed the most toxic of the group, that fact should be supported by a table providing comparative LD_{50}s for this and other members of the chlorinated ethanes known to be significant constituents of the chlorinated C2 streams.

A brief search of the literature will reveal that, due to their varying chemical and physical properties, the mechanisms of toxicity exerted by the various chlorinated ethanes vary significantly and that data for 1,1,2,2-tetrachloroehane are not representative of all chlorinated ethanes. Thus, it is not possible to verify the validity of using data developed for 1,1,2,2-tetrachloroethane as surrogate for data representing the contents of the C2 streams unless some information is provided to define the additional constituents that may account for a significant portion of this chemical mixture.

In summary, while this is an excellent submission for 1,1,2,2-tetrachloroethane, it should not be considered sufficient for the chlorinated C2 streams unless or until the composition of this chemical mixture is further defined and at least minimal comparative data are provided to confirm 1,1,2,2-tetrachloroethane is representative of the full contents of this mixture.

Thank you for this opportunity to comment.

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